

**METHOD AND SYSTEM FOR PRODUCING HYDROGEN BY REFORMING  
HYDROGEN-CONTAINING GAS**

**ABSTRACT OF THE DISCLOSURE**

A hydrogen reforming system includes a cyclical compression chamber having an entry port for receiving hydrogen-containing gas and an exit port for delivering reformed hydrogen-containing gas, an arrangement for heating the hydrogen-containing gas to a non-combustible temperature, and a drive system for cycling the cyclical compression chamber. The cyclical compression chamber has an operational cycle with an internal pressure and temperature absent combustion effective for reforming the hydrogen-containing gas.